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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/725,053
Filing Date: December 02, 2003
Appellant(s): KEGASAWA ET AL.

Keiko K. Takagi
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed June 25, 2009 appealing from the Office action mailed October 27, 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows: each of claims 1-5, not only claims 1, 2 and 4, are rejected under 35 U.S.C 103 over Peiffer et al. (US 5,716,570) in view of Wenz Jr. (US 4,731,004).

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4,731,004	WENZ, Jr.	3-1988
5,716,570	PEIFFER et al.	2-1998
3,825,383	HOAGLAND et al.	7-1974

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wenz Jr. (US 4,731,004).

Regarding claim 1, Wenz Jr. teaches a method of side-by-side co-extrusion using multiple materials wherein a main resin B and a second resin A for edge portions (Figure 1; col. 1, lines 12-17) are brought together such that resin A encloses the edges of resin B and wherein the combined resins are extruded through a die to form a resin film (Figure 6). Wenz Jr. teaches that no intermixing between the resins can be achieved and forming a boundary between the resins (Figure 1; col. 3, lines 21-29). Wenz Jr. further teaches that the process allows for tapering or fading of the materials (col. 3, lines 43-64; col. 9, lines 18-21 and col. 9, lines 44-48) to be precisely determined as required. The examiner submits that the teaching of Wenz Jr. reasonably suggests the shape of the resin interface is readily optimized to form the desired appearance and that the tapering and fading of the one resin into the other resin implies forming a convex shape and concave shape of the other resin. Additionally, since the main resin B layer has an exposed layer on both top and bottom the second resin A is understood to

only enclose the side edges of the main resin. The examiner submits that Wenz Jr. has effectively established the shape of the resin interface as a result effective variable that would have been readily optimized.

As to claims 2, Wenz Jr. teaches the viscosity/melt flow rate of the differing resins is employed as a variable to effect the interface between the resins (col. 8, lines 60-67).

As to claim 3, Wenz Jr. teaches controlling the flow rate of the materials (col. 2, lines 36-40; col. 9, lines 25-28).

As to claim 4, Wenz Jr. teaches the viscosity of the material impacts the interface between the resins. As the viscosity of a material is dependent upon its temperature, the examiner submits one having ordinary skill in the art would have readily adjusted the temperature to control the viscosity in view of the teaching of Wenz Jr.

As to claim 5, Wenz Jr. teaches controlling the width of each material (col. 2, lines 40-42; col. 3, line 65-col. 4, line 6).

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peiffer et al. (US 5,716,570) in view of Wenz Jr. (US 4,731,004).

Regarding claim 1, Peiffer et al. teach the basic claimed process of producing a plastic film wherein a main resin B is enclosed only on the side edges by resin A to form a boundary and extruding the resins through an extruding die (Abstract; Figure 3 and 3a). Peiffer et al. do not teach the main resin has a convex shape and the side edge resin has a concave shape. However, Wenz Jr. teach a method of side-by-side co-extrusion to form a film wherein the shape of the interface between the resins is controlled and adjusted as required to achieve a desired appearance (col. 3, lines 21-64).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Peiffer et al. with the teaching of Wenz Jr. and to have optimized the shape of the interface between the resins for the purpose as taught by Wenz Jr. of meeting customer demands and providing a desired appearance (col. 3, lines 43-51; col. 9, lines 18-24 and 43-48). The examiner submits that Wenz Jr. has effectively established the shape of the interface between the two resins as a result effective variable.

As to claims 2-5, Wenz Jr. teaches controlling viscosity, flow rates and widths (col. 8, lines 60-67; col. 2, lines 36-40; col. 3, line 65-col. 4, line 6; col. 9, lines 25-28) to control the interface between the resins.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Peiffer et al. with the teaching of Wenz Jr. and to have utilized viscosity, flow rates and width to control the interface between the resins for the purpose of achieving a desired product appearance.

Claims 1, 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoagland et al. (US 3,825,383) in view of Peiffer et al. (US 5,716,570).

Regarding claim 1, Hoagland et al. teach a method of producing a multi-layered film wherein a main resin 60 and a secondary resin 61a and 61b are brought together before they are extruded through a die wherein there is a boundary between the layers and the main portion of the resin has a convex shape and the secondary resin has a concave shape (Figure 9; col. 2, lines 5-28; Example 1 and Example 2). Hoagland form a film that is flattened in the die such that the secondary resin layers form a top and bottom portion not edge portions. However, Peiffer et al. teach that in film forming extrusion processes the films that were conventionally

only provided on the top and bottom of the multilayered film (Figure 2) can also be formed as edge resins (Figure 3).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Hoagland and to have formed a film with the secondary resin on the edge portions as suggested by Peiffer et al. for the purpose of producing additional film products and for the purpose of facilitating recycling of edged trim film and reducing operational costs.

As to claim 3, Hoagland teaches controlling the ratio of the resin feed rates (col. 4, lines 60-66).

As to claim 4, Hoagland employ different temperatures for the different resins (col. 5, lines 11-19).

(10) Response to Argument

Appellant's argument essentially alleges that the examiner has not established a *prima facie* case of obviousness because each and every limitation of claim 1 has not been taught or suggested by the applied references. The examiner disagrees and submits that the applied references do teach or suggest each and every limitation of claim 1 and that a *prima facie* case has been established.

A. Appellant argues that Wenz Jr. does not teach or suggest every limitation of claim 1 because Wenz Jr. fails to teach or suggest "joining the first resin and the second resin in such a manner as to enclose only both side edges in a crosswise direction of the first resin for the middle portion which is formed as a cross-section convex shape with the second resin for the edge portions which is formed as a cross-section concave shape and to form a boundary of the first resin and the second resin."

Specifically, appellant argues in the second paragraph of page 9 that claim 1 specifically requires a cross-sectional configuration such as that set forth in Figures 3 and 4 and that Wenz Jr. does not teach or suggest the claimed feed block used to join the first and second resins. This argument is not persuasive. The examiner submits that the claim is not limited to the specific configuration of the feed block and film set forth in Figures 3 and 4. Claim 1 requires "a feed block which includes a joining part having a specific cross-sectional shape" such that the feed block can produce a film having the required properties. As such, claim 1 requires the resins be fed through a feed block which includes a joining part having a specific cross-sectional shape that can achieve the claimed result. If the cross-sectional shape is adequate to achieve the desired configuration of the resins (e.g. concave and convex, only both side edges are enclosed, and a boundary of the first and second resin), the limitation is met. As such, the feed block configurations set forth in Wenz Jr. (e.g. Figures 3-12) are understood to meet the feed block limitation because they include a “feed block which includes a joining part having a specific cross-sectional shape” that is be employed to produce a film having the claimed configuration as described in more detail below.

Appellant further argues that Wenz Jr. fails to disclose a structure that would result in the claimed convex/concave shape between the first and second resins and that the resins of Wenz Jr. do not form a boundary as required by claim 1. This argument is not persuasive. As an initial matter, the examiner notes that while the figures of Wenz Jr. are helpful in understanding the disclosure, none of the figures in Wenz Jr. clearly show a film wherein only both side edge portions of the first resin are enclosed by the second resin (i.e. the upper and lower surfaces of the middle portion of the film main body containing the first resin are not encapsulated/covered by the second resin) in such a manner that the first resin has a convex shape and the second resin has a concave shape and that a boundary of the first resin and the second resin is formed

as required by the claims. However, the examiner submits that Wenz Jr. provides applicable teaching throughout the specification suggesting such a claimed configuration. Namely, the examiner submits that within the context of Wenz Jr. the teaching of "a taper" suggests the claimed configuration. Specifically, the examiner points to the following citations from Wenz Jr:

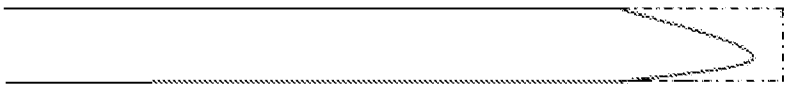
> "In an environment where a clear material is extruded side by side with an opaque material, this control permits the taper or fade out of the opaque material into the clear material to be precisely determined and uniform along the extruded length of the film. The amount of taper or fade out can thus be set in accordance with the preference of the customers." (col. 3, lines 44-51).

> "If the shape of the barrier allows one material to reach a point on the top of the teardrop shaped area while the other material reaches the point on the bottom directly below the top point, an intermix of the material will occur to create a taper at the joint." (col. 6, lines 45-51).

> "Customers can select the type of junction desired; ranging from a sharp demarcation between material to a very gradual fading of one material into the other." (col. 9, lines 18-21).

> "The ability to control the degree of intermix allows the customer to select the appearance of the joint between the materials, including a sharp separation from clear to opaque or a gradual fade out from opaque to clear." (col. 9, lines 44-47).

When taken in context, as an example, the examiner submits the citations from Wenz Jr. suggest the following film configuration along both edges of the film:



The examiner submits that such a configuration shown above meets the claim in that the taper of the first resin (solid line) forms a convex section that corresponds to a concave shape in the second resin (dotted line) while including a configuration that has the first resin only enclosed along the side edges and that forms a boundary between the first and second resin.

As such, while the examiner agrees that the suggested film configuration from Wenz Jr. drawn above does not look exactly like the configuration shown in appellant's Figure 4, the examiner submits that the precise configuration shown in Figure 4, which is produced by the specific feed block shown in Figure 3 in appellant's specification, is not required to meet the claim. Further, the examiner submits that the teaching within Wenz Jr. effectively establishes the control and shape of the boundary between the two resins as a result effective variable that would have been readily determined and optimized in view of the specific customer requirements and preferences.

Appellant further argues at the bottom of page 9 and through page 10 that the recitation of a "boundary" in claim 1 means that there is no overlap or intermixing of the resins while Wenz Jr. discloses intermixing between the resins which is the opposite of a boundary. This argument is not persuasive. For the reasons set forth above, the examiner submits that Wenz Jr. suggests controlling the boundary to produce a desired taper between the resins, including a boundary wherein there is no overlap or intermixing at the joint (also see: col. 3, lines 20-29 and 43-44 in addition to the above citations). However, while the examiner does not believe it is necessary to

rely on an alternative interpretation, it is submitted that the language within claim 1 does not positively require that there is no overlap/intermixing between the first resin and the second resin as set forth in the arguments. The examiner submits that the “boundary of the first resin and the second resin” can also be reasonably understood to be a zone between the convex first resin and the concave second resin that includes some overlapping/intermixing of the first and second resin as long as the other limitations of the claim are still met. Accordingly, in view of the teaching of controlling the taper within Wenz Jr., the examiner submits that the claims are met by Wenz Jr. under either interpretation of the scope of the recitation “boundary of the first resin and the second resin”.

B. Appellant argues that Peiffer et al. in view of Wenz Jr. fails to teach or suggest every limitation of claim 1.

Appellant argues that Peiffer et al. do not disclose joining polymer B and polymer A in a manner such that the side edges of polymer B are enclosed by polymer A. This argument is not persuasive. The examiner submits that under a reasonable interpretation of the term "enclosed" the side edges of the main resin B are “enclosed” by the resin A in Peiffer et al. (Figure 3 and Figure 3A). Further, for the reasons set forth above, the examiner submits that Wenz Jr. provides additional teaching that suggests "enclosing" the side edges in the more narrowly construed manner being argued by appellant. Further, for the reasons set forth above in the discussion of the Wenz Jr. reference, the examiner submits that the deficiencies of Peiffer et al. (e.g. convex/concave shape) are remedied by Wenz Jr.

C. Appellant argues that Hoagland et al. in view of Peiffer et al. fails to teach or suggest every limitation of claim 1.

Appellant argues that Hoagland teaches forming a multi-layered film wherein the first resin and second are extruded as layers. For example, appellant argues, the second resin is formed on the main body surfaces of the first resin. Thus, appellant concludes that Hoagland does not disclose enclosing only both side edges as claimed. Appellant then argues that since Peiffer does not disclose that polymer B and polymer A are joined in a manner such that both side edges of polymer B are enclosed by polymer A and that since Peiffer does not disclose or mention the shape of the cross-section where the polymer B and polymer A are joined, Peiffer does not cure the deficiencies of Hoagland.

This argument is not persuasive. The examiner agrees, in general, with appellant's characterization of Hoagland et al. Namely, Hoagland et al. employ a method wherein a main resin (60) (see Figure 9) and a secondary resin ((61a) and (61b)) are brought together such that there is a distinct boundary between the layers and the main portion of the resin (60) has a convex shape and the secondary resin ((61a) and (61b)) has a concave shape (Figure 9; col. 2, lines 5-28; col. 5, lines 53-67) to produce a multilayered film with the secondary resin ((61a) and (61b)) forming top and bottom layers and the main resin (60) forming a layer in between the secondary resin layers. As a standalone reference, the examiner agrees that Hoagland et al. is unable to meet the claim. However, Peiffer et al. teach that while it is known to produce multilayered films with a resin layer A (corresponding to 61a and 61b of Hoagland et al.) above and below a resin layer B (Figure 2) (corresponding to 60 of Hoagland et al.), that it is advantageous to take the known configurations and rotate them 90 degrees to form a film with the resin A as side edges and the resin B as a main body layer (compare Figure 2 with Figures 3 and 3a of Peiffer et al.).

As such, the combination suggests taking the process of Hoagland et al. and rotating the configuration of Figure 9 by 90 degrees [note for the sake of clarity: Figure 9 of Hoagland

already shows the layer configuration 90 degrees out of phase from what would be the intuitive presentation of the initial configuration in that the layers (61a) and (61b) are initially, prior to the modification, the top and bottom layers of the multilayered film not the side edge layers as they would appear to be at a first glance of Figure 9], as taught by Peiffer et al., to produce a film with the secondary resin ((61a) and (61b)) as the side edges and with the main resin (60) as a main body of the film. Upon rotating the configuration of Figure 9 in Hoagland et al. 90 degrees such that the secondary resin becomes the side edge resin, the required concave/convex, enclosed, boundary, configuration set forth in claim 1 would be achieved.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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Examiner, Art Unit 1791

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